



Junk Foods, Their Ill Effects on Human Health and Measures of Their Regulation

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ABSTRACT : The aims of present study were to elucidate the ill effects of junk foods on human health and the measures of reduction of their effects. The junk foods are used by most of peoples due to their tastes and flavours and advertisements otherwise these food items are not good for health. The intake of junk foods (zero nutritional values) leads to several disease to different body parts and organs like teeth and skin, liver, kidney and heart. Some studies concluded that prolonged use of these items can cause cancers or brain disease. It has been revealed that consumptions of junk foods have influences on body similar to that of drugs; consumers may be addicted to these food items like addiction of cocaine. To decline the ill effects of these foods on human health, we should avoid these items and should prefer the home made and healthy foods, fruits and vegetables. We should choose the diet or food having proportioned carbohydrate, protein, vitamins, minerals, and water. We should follow precautions and prepare food in such manner so that it vitamin remain in food because most of them vitamins are resolved in water and destroyed in heat. Government should ban the junk food producing industries or control the production of such foods by legislation, by imposing tax, by awaring the peoples about bad effects of same foods.

KEY WORDS :

Junk foods, Ill effects,
Human health

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In our body all activities are depends on energy, comes from food so we can say that intake of food is necessary for all the living beings. A diet that provide nutrients for proper functioning and growth, called as balanced and healthy diet. In order to live health life we have to get the nutrition from such healthy diet, we should use fresh fruits, fresh vegetables, whole grains, legumes, nuts and lean proteins for majority of calories. However, daily calorie requirement depends on physical works, age, gender, therefore a

men or person, who exercise required more calories than women, and people who don't do physical activities respectively. Consumption of empty calories or calories without nutritional value has adverse effects on human health. Such calories are obtained by the consumption of sugars and solid fats, such as butter.

The intake of balanced diet is necessary because every organs and tissues need proper nutrition for its proper functioning. Lack of balanced diet, body becomes more prone to

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many disease, infection, fatigue, and poor performance etc. In children high consumption may responsible for retarded growth and physical and mental developmental.

The healthy and balanced diet has low quantity of unnecessary fats and sugars but have high amount of vitamins, minerals and proteins. The following food groups are essential parts of a balanced diet.

Fruits and vegetables are considered as good source of vitamins, minerals and fibres, hence, they play important role in prevention of deficiency of important vitamin like C and A etc. Use of fruits in peoples reduces the risks of chronic diseases. Potassium in diet is responsible for reduction in risk of heart disease and kidney stones etc. Folic acid enhances erythropoiesis and also during pregnancy period in women. The fruits and vegetables are also act as enhancer of immune system and strengthened the power of fight for diseases. Being the part of healthy and balanced diet the fruits and vegetables can be part complementary treatment against symptoms, illness, conditions and even disease. Besides these the grains and cereals, pulses and meat are also are the major and part of healthy diet and content in diet. Most of these are prime source of proteins and essential for development of muscles and brain. Some dairy products as cheeses, fat free milk and yogurt are also good sources of vitamin D, Calcium and other essential substances necessary for health. Besides these plant-based milks, almond, or soy are rich with calcium and other nutrients, and considered as best alternatives to dairy products. Intake of balanced diet and daily exercise are in combination can help to live long and sound health and may also reduce the risk of many diseases and overall promote the health.

In present situation every body's life is too busy to look after their own health and body and every one depends and wants only easily available and easy to prepare foods. The junk or fast food is very popular among all aged people including teenagers, children, youngsters and old, but nobody care or know about the effects of fast foods on health.

The term junk food has been applied for cheap food containing high levels of calories in form of sugar or fat but have little fibres, proteins, vitamins and minerals. In another words the food with little "nutritional value" and contains excessive fat, sugar, salt, and calories is considered as junk food^[1-3]. It has been revealed that food with high quantity of protein like meat cooked in saturated fat also considered as junk food. The

consumption of fast or junk foods may leads to negative health effects like obesity, cardio-vascular disease^[4-6].

Many commercial products, including candy, bakery goods, ice cream, soft drinks have plenty of calories and lack of nutritional values or proteins, minerals salts etc., these products are considered as junk foods^[7]. Some workers have suggested that junk foods include salted snack foods, gum, candy, sweet desserts, fried fast food, and sugary carbonated beverages^[8], while other revealed that food is either healthy or junk food depends on their composition and methods of their preparation^[9].

Among junk food carbohydrates present in high quantity in carbonated beverages and the fats present in potato chips, burgers, pizza, fried chickens, most of these products have trans fats. The consumption of salts in diet is one of the determinants of blood pressure levels and cardiovascular problems. Less than 5 gm of salt intake per day by a person is recommended by WHO to prevent the cardiovascular disease. Frequent intake of junk food may leads to risk of obesity, cardiovascular disease, diabetes, weight gain, and many other chronic health conditions^[10] and also reported that at the age of 30's arteries lead to clogging and then heart attack^[11].

Intake of high fat containing food causes accumulation of fat in body, increase in weight and obesity. The more weight may responsible to risk for serious chronic illnesses such as diabetes, heart disease and arthritis. It has been also revealed that high amount of fat in diet may be responsible for poor cognitive performance and fat and sodium can contribute to heart disease by raising blood cholesterol levels and contributing to arterial plaque build up. The high intake of trans-fatty acids in form of junk foods and fast foods can lead to fatty liver deposits and dysfunction and disease. Excessive sodium consumption in diet may also cause renal dysfunction and kidney disease. High intake of sugar and carbohydrates in junk food may responsible to type 2diabetes because excess sugar puts your metabolism under stress, at that time your body has to secrete more insulin to prevent increase in blood sugar levels. This excess release of insulin may cause the damages in body's ability secretion by pancreas. A healthy and balanced diet can is helpful in maintaining the body's insulin sensitivity.

Junk food has become a major problem and many countries are taking action – banning junk food advertising in children programmes, removing it from schools and even imposing a fat- tax. Many junk foods



also have trans-fats, which behave like saturated fats when they get in the body. They clog up the human arteries and cause plaque to build up contributing to heart disease and stroke symptoms. In a report it has been revealed that mothers who eat junk food during pregnancy or breast-feeding borne the children more prone to obesity, diabetes, raised cholesterol and high blood cholesterol^[12]. Another recent study concluded that pregnant mothers, depends on diet with high sugar and fat, have babies who are likely to become junk addictive because high fat and sugar alter the foetal brain's reward pathway and food preferences^[13].

The reduction in the consumption and improvement of nutritional quality of junk foods has become an important step for health present and future of us and our generations. For this legislation actions adopted in different countries to reduce the use of such foods. A health report presented by Anandgrover (2014) on unhealthy foods, non-communicable diseases and the right to health in United Nations and recommended to Government to involve and take tight action for developing food and nutrition guidelines, regulating marketing and advertising of junk food, adopting consumer-friendly labelling of food products, and establishing accountability mechanisms for violations of the right to health^[14].

Another attempt for control of consumption of junk food may be implemented through price control, taxation. Leading to this, consumption of saturated fat reduced by Denmark (2011) by the world's first fat-food tax in October^[15-17].

Junk food producing industries are growing at global level by alarming rate in India, according to a report of National Restaurant Association of India (NRAI) 2010, the fast food industry in India was estimated to be between Rs. 6750- Rs. 8000 crore, growing at a compound annual growth rate of 35-40 per cent. Junk foods are available easily and everywhere because they are advertised through media. Their attractive packaging, additives, flavour enhancer colours, texture, appearance etc are also responsible for high consumption of junk foods. It has been concluded in the report of the Integrated Disease Surveillance, that rural populations in India were useless fruits and vegetables; hence they are getting more disease^[18]. In a scientific study it has been concluded that intake of fatty acids affected the brain, the high fat hit the brain and consequently a message send brain to cells of body to ignore the appetite suppressing signals weight

controlling hormones^[19].

Another study revealed that intake of trans-fat in form of junk food, brain may altered and show symptoms similar to Alzheimer's disease^[20]. Several researchers avowed that junk food act as addictives like cocaine, because high amount of junk food and monosodium glutamate (MSG), high fructose corn syrup, hydrogenated oils, refined salts and chemical preservatives have influences on brain like that of cocaine^[21]. Similarly another study revealed that the excess and long time use of junk foods affects the brain just like drugs and dopamine secretion was found similar to as drug addicted persons^[22]. It has been widely accepted that low nutrition value food can leads to retardation of mental growth in children and also affects the sperm quality and quantity in adults as compared to person use healthy diet^[23].

Regulations on junk food:

On 21 January, 2011, WHO issued a recommendation for a ban on junk food in schools and playgrounds for enhancing the use of healthy diet and to control the child obesity^[24]. WHO also suggested recommended that the places, where children gather should be free from such types of foods high in saturated fats, trans-fatty acids, and free sugars or salt. Britain is considered as the most severely affected country in Europe from obesity, it has been reported that nearly 26 per cent of the population are obese^[25]. In this country junk food in schools banned through legislation in 2005^[26] and ban on ads for junk food through television programmes aimed at children below 16 years came into existence in August 2008^[27]. In UK consumers suggested their government to explore provisions on food information to make sure that the 'traffic light labelling' is used on all food products^[28]. In 2010, the US government proposed a law to ban junk food in schools^[29] while in Arizona, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Nebraska, New Jersey, New York, and West Virginia the sale of junk foods in elementary banned for at least after lunch^[30]. In Mexico and United Arab Emirates, the junk foods and soft drinks were banned by government in all public, private and elementary schools in May 2010^[31,32]. In Canada use of candy, chocolate, fries, pop and soft and energy drinks in school banned by Ontario state government in 2010^[33]. The government of Denmark has been try to reduce the health risk of junk foods by imposing tax on food items (butter, milk, cheese, pizza, meat, bacon, ice cream and processed food) containing

more than 2.3 per cent saturated fat^[34]. The government belied that high prices will deter people from eating junk foods and this tax will make their government able to increased health care the obese peoples. Also, high prices will dissuade people from eating food high on saturated fat^[35].

Tax was imposed on foods, which have high sugar, fat, carbohydrates and salts in Hungary in September 2011. Besides these carbonated beverages, alcohol and drinks with high caffeine were also put under taxable category^[36]. Along with this many other countries like Switzerland, Austria and Denmark, Finland and Romania have already banned trans-fats, are by imposing fat taxes on junk foods^[37].

Recommendations for healthy foods:

Intake of healthy food is key of healthy and long

life. To overcome the problems caused by intake of these foods, we have to change our food habits and daily routine activities. Different guidelines regarding healthy diets for sound health in children and adults have been presented below (Tables 1, 2, 3 and Fig. 1).

According to the Dietary Guidelines for Indian peoples (National Institute for Nutrition, 2011) a healthy diet provides 50-60 per cent of calories from carbohydrates, 10-12 per cent from proteins and 20-25 per cent from fats (Table 1).

Though NIN recommends a maximum of two per cent of total calories to come from trans-fats, the recommendations of WHO is one per cent. Balanced diet should provide other non nutrients such as dietary fibre, antioxidants and photochemical which bestow positive health benefits. Antioxidants such as vitamins C and E, beta carotene, riboflavin and selenium protect the human

Table 1 : Recommended dietary guidelines for Indians

Carbohydrates	Sugar	Proteins	Salts	Fats
50-60 %	10%	10-15%	6g per day	20-30%

Source: National Institute for Nutrition (2011)

Table 2 : Recommended daily allowance (RDA) for a 10-12 year old moderately active child

Sr. No.	Nutrient/energy	Energy RDA
1.	Energy	2100 Kcal*
2.	Sugar	Upto 30 g
3.	Total visible fat	35 g [~15%E]
4.	Saturated fatty acids (SFA)	Upto 8% E
5.	Trans fatty acids (TFA)	< 1% E
6.	Salt	5 g

Source: Dietary Guidelines for Indians, 2011, National Institute of Nutrition

Notes: Average for calculation purpose [2,190 Kcal for a boy weighing 34.3 kg and 2,010 Kcal for a girl weighing 35kg]; calorie calculation: 1 g of fat = 9 Kcal; 1 g of protein = 4 Kcal; 1 g of carbohydrate/sugar = 4 Kcal.

Table 3 : Modifiable risk factors – unhealthy diet associated with three out of four major non-communicable diseases

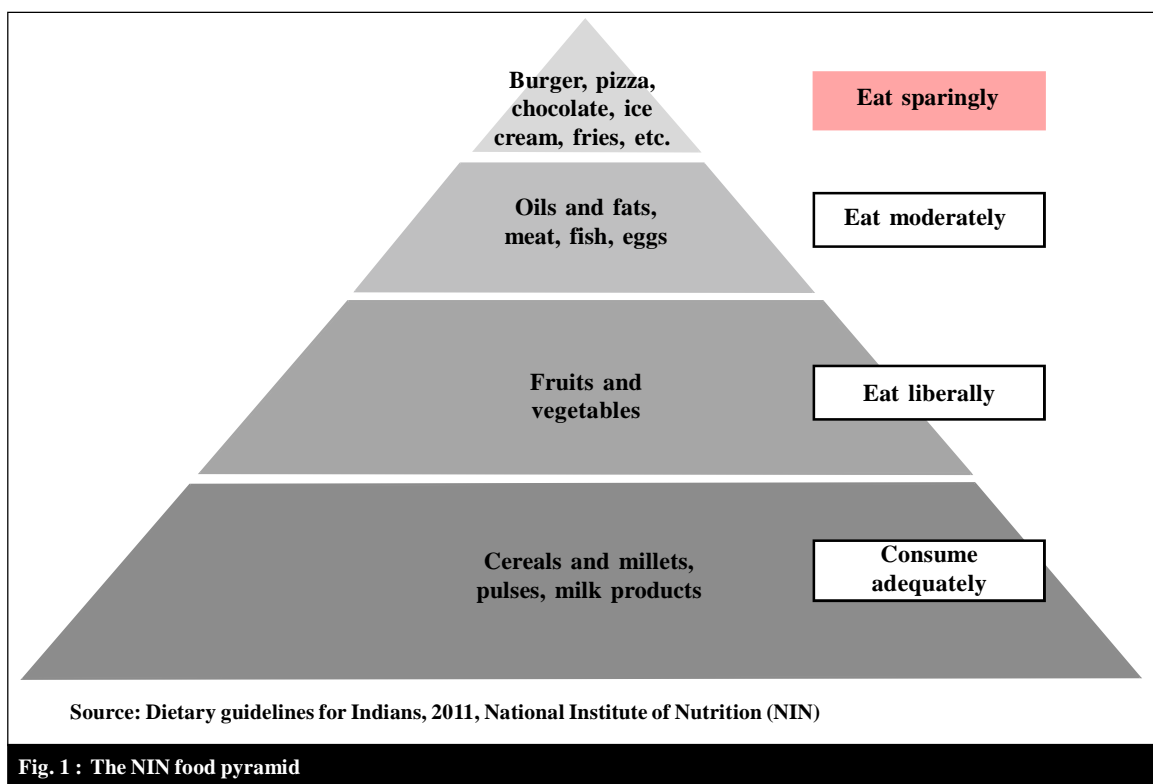
Sr. No.	Disease	Tobacco	Unhealthy	Physical activity	Harmful use of alcohol
1.	Cardiovascular disease	√	√	√	√
2.	Diabetes (Type 2)	√	√	√	√
3.	Cancer	√	√	√	√
4.	Chronic respiratory disease	√			

Source: Global Status Report on non-communicable diseases, 2010, WHO

Table 4 : RDA of nutrients considered for children (based on 2100Kcal for 10-12 years)

Sr. No.	Nutrients	Amount
1.	Salt/sodium	RDA for salt is 5 g per day; RDA for sodium is 2 g per day
2.	Total fat	Total fat intake should not be >30% energy required (E) per day
3.	Trans fatty acids (TFAs)	RDA is <1% E per day
4.	Saturated fatty acid (SFAs)	RDA is upto 8% E
5.	Added sugar	RDA is 30 g sugar per day

Source: Dietary guidelines for Indian, 2011, NIN



body from free radical damage other photochemical such as polyphenols, flavones etc. also afford protection against oxidant damage.

The guidelines of NIN (National Institute of Nutrition) narrate the consumption and importance of foods through a 'Food Pyramid' (Fig. 1). According to this pyramid balanced diet should contain four important food groups like cereals, millets and pulses; vegetables and fruits; oils, fats and nuts; and milk and animal foods. The consumption of junk food items like pizza, burgers, fries, ice cream, jam and chocolates etc. are considered as bad for health and these food items must be avoided.

Conclusion :

The junk food is tasty but without nutritional value because it is prepared with chemicals, artificial scent and flavour. These food items are liked by peoples due to its taste and flavour and its repeated advertisement. Therefore by consumption of these foods persons suffers from vitamins and minerals deficiency. Long-time intake of these food items may causes disease to many important organs and may cause liver dysfunctioning, cardiovascular disease, renal problems, and cancers or may be addicted to these foods. So we should prefer homemade food and should take balanced food having

proportioned carbohydrate, protein, vitamins, minerals, and water. We should follow precautions and prepare food in such manner so that it vitamin remain in food because most of them vitamins are resolved in water and destroyed in heat.

From many studies it has been concluded that all junk foods do not have nutritional value and cannot be considered as beneficiary to our body they provide all harm to your health. In order to live long and happy, it is necessary to avoid junk foods. Many studies revealed that junk food producing companies are just making fool the consumers through the deceptive ads that show junk food as healthy. We have to replace junk food with healthier food like protein rich and excess fat and carbohydrate free diets like pulses, fruits and vegetables etc. To escape from ill health effects of these foods, government should suppress the production by ban on advertisement of such items and by increasing the tax on these junk food manufacturing companies. The governments should also aware the peoples especially children and their parents about health hazards of the junk foods by enhancing the NGOs or through school education. The government should insist these companies to label the every item properly because lack of labelling about nutritional data creates complications in

comparisons between different products. The proper labelling should be mandatory at least for trans and saturated fats, sugars and salt along with preservatives. As the most affected are children, it is necessary to ban junk food from schools and places where children have easy approaches to these foods.

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